



# UNITED STATES PATENT AND TRADEMARK OFFICE

11A  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,985	01/23/2004	Chang-Hyun Lee	5000-1-507	8233
<div>-33942      7590      12/31/2007 CHA &amp; REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652</div>			<div>EXAMINER KIM, DAVID S</div>	
			<div>ART UNIT 2613</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 12/31/2007</div>	<div>DELIVERY MODE PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/763,985

Applicant(s)

LEE ET AL.

Examiner

David S. Kim

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6, 7, 9, 11, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6, 7, 9, 11, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Claim Rejections - 35 USC § 112

1. Applicant's response to the rejection of **claims 6-9, 11, 13, and 14** under 35 U.S.C. 112, first paragraph (written description), in the previous Office Action (mailed on 27 April 2007) is noted and appreciated. Applicant responded by amending independent claim 6. Applicant's amendment overcomes the previous rejection, which is presently withdrawn. However, Applicant's amendment introduces new issues under 35 U.S.C. 112, first paragraph, to independent claim 6. See below for further details.
2. Applicant's response to the rejection of **claims 8, 9, and 14** under 35 U.S.C. 112, first paragraph (enablement), in the previous Office Action (mailed on 27 April 2007) is noted and appreciated. Applicant responded by presenting an amendment that amends some of the limitations of claim 8 and then incorporates these amended limitations of claim 8 into independent claim 6. Applicant's amendment overcomes the previous ground of rejection (enablement of "storage areas" being transmittable), which is presently withdrawn.
3. Applicant's response to the rejection of **claims 10 and 11** under 35 U.S.C. 112, first paragraph (written description), in the previous Office Action (mailed on 27 April 2007) is noted and appreciated. Applicant responded by presenting an amendment that cancels claim 10 and amends claim 11. Applicant's amendment overcomes the previous ground of rejection (written description of "an HDLC packet of a size of 64 byte to 1024 byte of a ATM payload"), which is presently withdrawn.
4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. **Claims 6, 7, 9, 11, 13, and 14** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In particular, notice the following limitations in independent claim 6:

said switching unit comprising:

a first memory for storing the MPTS data; and

a plurality of secondary memory units having assigned storage areas, defined by an address, dependent upon the MPTS data associated with a corresponding subscriber in the first memory and

means for outputting the stored MPTS data to a corresponding one of the plurality of subscribers by said subscriber accessing said address in said secondary memory.

Notice the supporting portion of the specification (p. 10, l. 14 – p. 11, l. 10) and Fig. 7:

In particular, a plurality of MPTSs data output from the HDLC packet processing section 53 are assigned and stored according to storage areas based on the MPTS data information. The stored MPTS information is transmitted to each of the subscribers 300-1 to 300-n through each of the subscriber-based memories 72-1 to 72-n.

According to one embodiment of the present invention, each of the subscriber- based memories 72-1 to 72-n has a storage capacity capable of storing two image channels.

An area is assigned according to MPTS data inputted to a main memory 71. In order to output a channel required by each of the subscribers 300-1 to 300-n, each of the subscriber-based memories 72-1 to 72-n accesses an address. MPTS data in a channel, required by a subscriber, are assigned to an address. Upon accessing the particular address the stored MPTS data is output.

In this embodiment, the main memory 71 and each of subscriber-based memories 72-1 to 72-n output or discard first-inputted data in a first-in first-out (FIFO) method when data of more than a predetermined amount are filled.

When the above memory based switching operation is performed, the switching apparatus processes the MPTS data by software through area assignation in memory. This occurs even if inputted MPTS data or the number of subscribers, which is an object of an output, changes. Thus, significant improvement in expansibility is achieved, in comparison to the conventional switching apparatus that is constructed in hardware.

Regarding the written description requirement, the “switching unit” of the claim 6 is *more specific* than the “switching unit” of the original disclosure. Accordingly, the added level of detail in claim 6 constitutes **new matter**. In particular, the “switching unit” of the claim 6 provides this new matter through the added level of detail regarding the limitation of “assigned storage areas, defined by an address, dependent upon the MPTS data associated with a corresponding subscriber in the first memory” and the limitation of “said subscriber accessing said address in said secondary memory”. That is, the language of claim 6 expressly links together these “assigned storage areas”, this “address”, and the “MPTS data associated with a corresponding subscriber in the first memory”. However, the original disclosure is not so specific.

For example, although the original disclosure teaches an “assigned storage area” (i.e., “area is assigned according to MPTS data inputted to a main memory 71” on p. 10, l. 20), it does not teach “a plurality of secondary memory units *having*” instances of these “assigned storage areas”.

As another example, although the original disclosure teaches an “address” (i.e., “address” on p. 10, l. 22 and “address” on p. 11, l. 1), it does not teach this “address” *being linked to* the “assigned storage areas”. It also does not teach this “address” being “*dependent* upon the MPTS data associated with a corresponding subscriber in the first memory”. It also does not teach this “address” being “*in said second memory*”.

As another example, although the original disclosure teaches “assigned storage areas” being “dependent upon MPTS data” (i.e., “area is assigned according to MPTS data inputted to a main memory 71” on p. 10, l. 20), it does not teach these “assigned storage areas” being *defined by the aforementioned* “address” (i.e., “address” on p. 10, l. 22 and “address” on p. 11, l. 1). It also does not teach these “assigned storage areas” being “dependent upon the MPTS data *associated with a corresponding subscriber*”. It also does not teach “a corresponding subscriber *in the first memory*”.

Accordingly, these examples show how the “switching unit” of the claim 6 is *more specific* than the “switching unit” of the original disclosure. Accordingly, the added level of detail in claim 6 constitutes ***new matter***. As a remedy, Examiner respectfully suggests Applicant to amend the claim language to more closely match the “switching unit” of the original disclosure.

**Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 6, 7, 9, and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lang (U.S. Patent No. 5,835,602) in view of Newton (Newton's Telecom Dictionary, 8<sup>th</sup> ed.), the admitted prior art (hereinafter the "APA"), Frenzel ("Programmable Framing Chip Improves OC-48 Efficiency"), and Opalka et al. (U.S. Patent No. 6,259,699 B1, hereinafter "Opalka"), with reference to Weik (*Fiber Optics Standard Dictionary, 3<sup>rd</sup> ed.*) and Newton.

**Regarding claim 6**, Lang discloses:

A transmission apparatus for use in an optical subscriber network, having a plurality of optical network units (ONU), the ONU comprising:

a synchronous transport module (STM) unit (e.g., 13 and 15 together) for receiving and converting a received optical signal into an electrical signal (SONET frame termination 13 in Fig. 1 is a synchronous transport module that receives and converts a received optical signal (SONET) into an electrical signal) and outputting an HDLC packet (output from 15 carries HDLC packets that are terminated in 17);

a high-level data link control (HDLC) packet processing unit (17 in Fig. 1) disposed inside the ONU, for receiving signals from the STM unit.

Lang does not expressly disclose:

the HDLC packet processing unit further including:

a **multi-program transmission stream (MPTS) data receiver** for receiving the signal from the STM unit;

an **MPTS data extractor** coupled to the **MPTS receiver**, for receiving the HDLC packet from the **MPTS** data receiver, removing overhead from the HDLC packet and extracting **MPTS** data;

a **buffer** coupled to the **MPTS** data extractor, for buffering the extracted **MPTS** data;

a **controller** for controlling the **MPTS** receiver, the **MPTS** data extractor and the buffer; and

a **switching unit** for switching the **MPTS** data from the HDLC packet processing unit to a plurality of subscribers, said switching unit comprising:

a **first memory** for storing the **MPTS** data; and

a **plurality of secondary memory units** having assigned storage areas, defined by an address, dependent upon the **MPTS** data associated with a corresponding subscriber in the first memory and

**means for outputting** the stored **MPTS** data to a corresponding one of the plurality of subscribers by said subscriber **accessing** said address in said **secondary memory** (emphasis Examiner's).

Regarding the data receiver and the data extractor, notice that such data reception and data extraction is implied by HDLC packet terminator 17 in Fig. 1. That is, clearly, HDLC packet terminator 17 receives a signal from the STM unit (signal output from 15), for outputting an HDLC packet (col. 2, l. 66-67, delineation of packets means that the packet boundaries are discerned so that later components know when a packet begins and ends) either somewhere within 17 or output from 17. Also, extraction of data is implied by 17 since the data in the HDLC packets have to be extracted for usage by any end user after 17. Preparation for such usage by an end user may involve the common component of a packet disassembler, as described by Newton ("PAD" on p. 757). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to provide a component that extracts the data from the HDLC packets. One of ordinary skill in the art would have been motivated to do this so that the data is in a form/stream that can be handled by the end user (Newton, "PAD" on p. 757), i.e., not in an HDLC packet format.

Regarding the MPTS data, the APA shows that such MPTS data is known and common in the art (APA, MPTS in Fig. 1). Usage of such data simply provides an obvious variation of Lang.

Regarding the buffer, the use of a buffer after a data extractor is an extremely well known and general technique in the art. Frenzel provides an example of this general technique (Channel buffer after the RX HDLC engine in Fig. 2). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ this technique in the apparatus of Lang. One of ordinary skill in the art would have been motivated to do this since a buffer is generally known to provide the ability to properly coordinate the timing of the transfer of data between various devices (Weik, "buffer", definition 3 on p. 83). Also, another motivation is to provide structural details for implementing the apparatus of Lang. That is, Lang is silent about the structural details of components that receive the data that is extracted by HDLC packet terminator 17 in Fig. 1. The teachings of Frenzel would speak into this silence with the example of its own structural details.

Regarding the controller, employing a controller for multiple components in an apparatus is an extremely well known practice. Frenzel shows the general technique of providing a control section for multiple components (bus from the CPU Interface in Fig. 2). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ a control section for controlling the components of the apparatus of Lang. One of ordinary skill in the art would have been motivated to do this for the common purpose of properly coordinating operation of all of the components, providing conventional functions such as synchronization of components, fault detection, fault recovery, configuration, and initialization.

Regarding the switching unit, such a switching unit is known in the art. Opalka provides an example (e.g., switching in Figs. 7 and 8, "first memory" as input port memory unit, "second memory units" as output port memory units, "dependency upon data" in col. 9, l. 30-31, "means for outputting" as the output ports). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to provide a switching unit, as exemplified by the switching unit teachings of Opalka, for switching the MPTS data from the HDLC packet processing unit to a plurality of subscribers. One of ordinary skill in the art would have been motivated to do this since such a switching unit is generally known to provide control over how to appropriately direct various communications to end users/customers/subscribers (Newton, "switching" and "switching arrangement" on p. 991, "switching



equipment” and “switching point” on p. 992). Otherwise, the end users/customers/subscribers might not receive their respective communication services properly.

**Regarding claim 7**, Lang in view of the references applied above to claim 6 (hereinafter the “RAA6”) does not expressly disclose:

The transmission apparatus as claimed in claim 6, wherein the buffer continuously outputs the MPTS data.

However, the APA discloses that MPTS data is a transmission stream (Applicant’s specification, p. 2, l. 22 – p. 3, l. 1). Such streams are often continuous, so an obvious variation of the apparatus of Lang in view of the RAA6 could reasonably include a continuous output from the buffer.

**Regarding claim 9**, Lang in view of the RAA6 discloses:

The transmission apparatus as claimed in claim 6, wherein the plurality of subscribers access the MPTS data based upon predetermined requirements of each subscriber (e.g., Opalka, each of the subscribers accesses the data through its own port).

**Regarding claim 14**, Lang in view of the RAA6 does not expressly disclose:

The transmission apparatus as claimed in claim 6, wherein the plurality of secondary memory units is configured for outputting or discarding first-inputted MPTS data according to a first-in first-out (FIFO) method.

However, FIFO is an extremely well known method for processing the contents of memory, as shown by Weik (“first in, first out” on p. 363). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ a FIFO method for the secondary memory units of Lang in view of the RAA6. One of ordinary skill in the art would have been motivated to do this to maintain the same order of data in which they arrived (Weik, “first in, first out” on p. 363). That is, data is sent in a particular order. Maintenance of that same order at the receiving end of a transmission link generally results in simple processing of that data. Otherwise, additional resources may be required for reordering the data according to a different method.

9. **Claims 11 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lang in view of the RAA6 as applied to the claims above, and further in view of Shohet ("HDLC framing of Ethernet packet").

**Regarding claim 11**, Lang in view of the RAA6 does not expressly disclose:

The transmission apparatus as claimed in claim 6, wherein the HDLC protocol provides a HDLC packet having **a size of 64 Bytes to 1024 Bytes**.

Regarding the size of 64 bytes to 1024 bytes, the payload of an HDLC packet is variable, so any suitable range of packet sizes would be an obvious variation, including 64 bytes to 1024 bytes. Shohet provides an example of a range of the same order of size (p. 12, 64 bytes to 1522 bytes, calculated from 6 bytes being 9.375% for shortest packet to 0.3942% for longest packet).

**Regarding claim 13**, Lang in view of the RAA6 and Shohet does not expressly disclose:

The transmission apparatus as claimed claim 6, wherein the transmission apparatus provides for a payload transmission rate of 6:512.

However, notice that Shohet teaches an overhead size of 6 bytes and a packet size range of 64 bytes to 1522 bytes (p. 12, 64 bytes to 1522 bytes, calculated from 6 bytes being 9.375% for shortest packet to 0.3942% for longest packet). The range of these teachings includes the payload transmission rate of 6:512.

#### **Response to Arguments**

10. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. In particular, notice that Applicant's most recent amendment to the claims introduces new grounds of rejection, i.e., a new ground of rejection under 35 U.S.C. 112, first paragraph (written description), and a new ground of rejection under 35 U.S.C. 103. The new ground of rejection under 35 U.S.C. 112 is based on Applicant's introduction of new matter. The new ground of rejection under 35 U.S.C. 103 is based on additional teachings from Newton and Opalka.

**Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK

  
KENNETH VANDERPUYE  
SUPERVISORY PATENT EXAMINER